

JAN 1 1927

PROCEEDINGS

of the

American Society

of

Civil Engineers

TWO PARTS

PART I



FEBRUARY, 1927

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AMERICAN SOCIETY OF CIVIL ENGINEERS

PROCEEDINGS

VOL. LIII

FEBRUARY, 1927

No. 2

SOCIETY AFFAIRS

A Successful Annual Meeting January 19-21, 1927

In looking back over the 1927 Annual Meeting, it is difficult to find any particular part that stands out above the excellence of the remainder. The attendance was good, the meetings were intensely interesting, and the social events even exceeded the standards of previous years.

The general plan, with a few exceptions, followed the customary arrangements, using the Wednesday sessions for meetings of interest to the entire Society; Thursday both morning and afternoon devoted entirely to concurrent meetings of Technical Divisions; and Friday to an all-day excursion.

Prizes Awarded

Aside from the regular business, the presentation of Medals and Prizes on Wednesday morning, January 19, was the colorful event of the Business Session. The report on the Amendment to the Constitution providing for changes in the method of Nomination of Officers was also an interesting part of this session. The number of Special Committee reports during the afternoon session was curtailed to permit of more extensive consideration and ensuing discussion. An especially interesting feature of this session was the exhibition of a film depicting the conduct of tests on a full-sized arched dam as conducted by members of the Society under the auspices of Engineering Foundation.

Members found difficulty in apportioning their time on Thursday between the

several simultaneous Division Meetings. The quality of the papers presented did great credit to the officers in charge of these Division activities. The only possible objection to these sessions was the shortness of time available for the complete discussion of the subjects. An improvement over former years was obtained by keeping all these Division Meetings within the Engineering Societies Building, making it possible for members to attend several sessions consecutively, according to their particular interest in the various topics.

Of the social events, the Dinner and Dance easily took precedence. It was widely attended as in former years. The conditions in the Grand Ball Room of the Hotel Plaza—a new location for this event—were found to be justly popular, and kept the large attendance to an early hour.

"Framem Riley" Again

Continuing the success of last year, the Committee selected for the entertainment on Thursday evening, a second episode in the career of "Framem Riley". Mr. Riley and the Barry McGarry Construction Company were haled into a Court which truly may be said to have been packed. Following this program, the usual Smoker on the Fifth Floor was held, combining to make a happy evening.

To conclude the meeting, an all-day excursion to Bridgeport, Conn., was featured. The special train engaged for this trip proved just the needed occasion for sociability and visiting among the members, ladies, and guests. At Bridgeport,

the party received a royal welcome, and thanks to the efforts of the Engineers' Club of Bridgeport, a most pleasing and profitable stay. After a fine lunch at the Hotel Stratfield, almost a dozen groups made their way to various manufacturing and engineering plants, where they examined details of the processes, re-assembling for the return trip to New York. No Society events were scheduled for Friday evening, although several well attended college engineering re-unions took place.

A number of visitors stayed over until Saturday and enjoyed a special inspection of subway construction, while others visited the 300-ton Beccari Garbage Incinerator at Twelfth Avenue and 56th Street, Manhattan.

Ladies Feted

In addition to these regular features of the program, a number of special events for the ladies were successfully carried out. These included a matinee party on Wednesday and a continuous entertainment on Thursday afternoon and evening, including bus trips, a tea, and a theatre party.

Attendance

As a matter of record, the following figures give the approximate attendance at the various Sessions:

Total registration, 1200; Annual Meeting, 350; Luncheon, 350; Structural Division, 225; Power Division, 65; City Planning Division, 75; Construction Division, 100; Highway Division, 80; Surveying and Mapping Division, 40; Sanitary Engineering Division, 100; Dinner and Dance, 600; Smoker, 925; and Bridgeport Excursion, 200.

No report of this meeting could be complete without noting the success of the Certificate Plan, obtaining reduced railroad fares for those attending. Again the members co-operated heartily to this end. Although the program represented an immense amount of detailed work and planning on the part of the members of the Local Committee, the success justified all their efforts.

HIGH LIGHTS OF 1926

Report of Board of Direction Shows Varied Progress

The Annual Report of the Board of Direction for 1926 details a number of features which should prove most interesting to every member. Only a brief mention of some of the more important ones can be made at this time.

Fifty-Seventh Street Property

Those who have followed the Society's excursion into the field of real estate must feel most gratified at the latest arrangements for the 57th Street property consummated during the past summer. This property, a part of it acquired in 1895, and the remainder in 1904, has been of great importance and value to the Society. In no way could this be better shown than by the leasehold just consummated, whereby the Society receives the equivalent of interest on a capital sum of more than \$1 000 000. This is merely an indication of its approximate value, but by no means of its ultimate limit.

Judging by both the past and the present, it seems fair to expect that this desirable site will continue to enhance in value. It is gratifying, therefore, to know that the Society will receive the benefit of such future enhancement through its continued ownership, meanwhile receiving a handsome income from its investment to date.

Technical Procedure Committee

An important step in co-ordinating and unifying the scientific activities of Society work took place in the formation of the Technical Procedure Committee. While it is still young, its efforts during the short period of its existence have justified the hope that it will provide just the directing force necessary to prevent overlapping and duplication of technical effort.

Besides the oversight of nine Technical Divisions, this Committee set up a code of procedure defining the functions of the various technical activities of the Society.

Student Aid

During 1926, the Society has made special efforts to serve its growing Student Chapters. One of the most tangible aids has been to provide free use of the Employment Service Bulletins to graduating students. Another is the remission of a full year's dues to graduates who apply immediately for Junior Membership.

That this and other efforts were fully appreciated is shown by the continued growth of this branch of the Society work and especially by the large influx of Junior Members from graduating classes.

Expulsions

In accordance with the provisions of the Society's Constitution, the Board has

considered charges of unprofessional conduct among members. After full consideration, these deliberations resulted in the expulsion of two members of the Society.

Part II of Proceedings

In addition to the regular issue of *Proceedings* containing Society affairs and technical papers, a more informal and intimate leaflet has been issued with *Proceedings* during the last half of 1926. For purposes of convenience as to handling by the postal authorities, this is known as "Part II" of *Proceedings*.

This innovation is still on trial. It has brought to members an insight into some of the details of Society work, an historical view of famous engineering events and personalities, and bits of professional news that would not seem appropriate in the technical part of *Proceedings*.

Increase in Membership

The year 1926 has been a banner year as far as additions to membership are concerned. The total increase was 721, or 6.4 per cent. Undoubtedly the sympathetic attitude toward Student Chapters has accounted for considerable of this growth, but there has been a very marked increase of Associate Members and a definite increase in the number in the Member grade. This development is especially gratifying from the standpoint of the future life of the Society.

For the details of these and others of the varied Society activities during 1926, members will wish to study the full report of the Board. This will appear later in *Proceedings*, probably in the March number.

Alexander Maitland, Jr.

Alexander Maitland, Jr., of Kansas City, Mo., Director of the Society from District No. 14, died suddenly Friday, December 24, 1926.

Mr. Maitland's health had been poor for some years past and recently he was confined to the hospital for several weeks. From this attack, however, it was felt he was improving and he was at his office on December 23, the day before his death.

Meeting of Executive Committee, December 17, 1926

The Executive Committee met at Society Headquarters; President George S. Davison in the chair; George T. Sea-

bury, Secretary; and present also, Messrs. Chevalier, Hazen, Humphrey, Robert Ridgway, and Treasurer Hovey.

Approval of Minutes

The minutes of the last meeting of the Committee held on September 13, 1926, were approved as adopted by the Board.

Surveying and Mapping Division

In accordance with authority granted by the Board of Direction the Constitution of the Surveying and Mapping Division, as adopted at the Philadelphia Convention, was approved.

Budget for 1927

The proposed Budget of the Society for 1927 was considered in detail and prepared for presentation to the Board at the Annual Meeting.

Recommendations to Board of Direction

Several subjects to come before the Board at its January meeting were discussed at length and specific recommendations as to action were made.

Student Chapters as Part of the Curriculum

The University of Colorado Student Chapter is an integral part of the Engineering Course, in that the meetings of the Chapter form definite assignments in the work of the Senior year with official college recognition and required participation.

As indicated by an attractive printed program, each member of the Senior Class is assigned a topic for presentation before the Chapter during the year. The subjects cover a wide range of engineering work, including the reviews of lives of many famous engineers. The result of this requirement is an increase in the interest taken by students in the Chapter and thereby added returns from the meetings themselves.

It is known that other—perhaps many other—Student Chapters are following a similar procedure. The advantages of the plan would certainly class it as a definite addition to the curriculum.

Society Appointments

Members have been appointed to act for the Society in the following capacities:

Engineering Foundation: Robert Ridgway, Past-President, Am. Soc. C. E. (re-appointed).

Sectional Committee on Underground Transportation in Metal Mines: H. S. Smith, M. Am. Soc. C. E.

Western Reserve University Centennial, November 12-13, 1926: J. W. Frazier, M. Am. Soc. C. E.

Working Stresses in Building Materials

An extremely valuable report submitted by the Building Code Committee of the U. S. Department of Commerce, has recently been published covering the timely subject of working stresses.

It will be remembered that this Committee has spent considerable time since its organization in 1921 in compiling various reports dealing with construction work. These have covered details in dwelling construction, zoning, and loadings for buildings. The present report is a logical development of the general subject of construction.

In detail, the stresses recommended are for reinforced concrete, cast iron, structural steel, and wood, including all classes of members and types of stresses.

Supplementary material covering more than forty pages gives the various details from which the recommended stresses were formulated, such as comparison of various building code requirements, procedure for engineering design according to various technical organizations, a discussion of reinforcement of steel webs, and a detailed discussion of the bases for the recommendation in structural steel and other materials, particularly wood.

The personnel of this Building Code Committee lends value to its recommendations. It includes among others, William K. Hatt, Rudolph P. Miller, John A. Newlin, and Joseph R. Worcester, all members of the Society who have specialized in these subjects.

Members who are interested in studying this résumé and the careful recommendations as to working stresses, may obtain a copy of the report from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a cost of 10 cents each.

Standard Engineering Code

An ambitious undertaking is under way in England to compile an extensive cable code which will be of special advantage to all engineers.

The project is expected to cover the publication of several volumes. The first volume would cover all matter normally

found in a standard general code plus the technical vocabulary and lists of materials to which reference is likely to be made; also a full range of figures showing dimensions, weights, pressures, stresses, etc. Among the other volumes to serve particular fields, the following might be of especial interest to members: Iron and Steel Work; Traction; Bridge and Construction Work; and Cement and Concrete and Other Building Materials.

The authors of this plan, The Amalgamated Code Compilers, Ltd., are anxious that the work shall cover the respective fields completely, and be of maximum utility to engineers. With this end in view, they are desirous of obtaining the fullest co-operation with practicing engineers. Such co-operation might take the form of furnishing them with catalogs, specifications, and other particular data that may apply.

This project will appeal especially to all members who have occasion to use the telegraph or cable in engineering work. Such men would find that any suggestions or assistance offered to the publishers of these codes would be greatly appreciated. Communication may be made direct to the Amalgamated Code Compilers, Ltd., 481 Mansion House Chambers, 11 Queen Victoria Street, London, E. C. 4, England.

Material Rather Than Details Determine Steel Column Strength

A series of tests of full-sized steel columns recently completed, indicates an important relation between the value of material as compared with the type of construction. These tests were conducted by the U. S. Bureau of Standards, in co-operation with the American Bridge Company and the Bethlehem Steel Company.

The specimens included 69 built-up columns, H-shaped, and five different types of construction. In addition, more than 1,000 test specimens cut from the columns were completely tested. Incidentally, the material met all the requirements of current standard specifications of structural steel. It differed greatly, however, as to the tensile yield point.

Details of these interesting tests are given fully in *Technologic Paper No. 328*, which may be had from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a cost of 40 cents.

Report of Tellers on Ballot for Officers of the Society

The following is the report of the Tellers appointed to canvass the ballot for officers of the Society as presented to the Annual Meeting, January 19, 1927:

"33 West 39th Street, New York, N. Y.
January 19, 1927

**"To the Seventy-Fourth Annual Meeting
American Society of Civil Engineers:**

"The Tellers appointed to canvass the Ballot of Officers of the Society for 1927 report as follows:

"Total number of ballots received..... 3 642

"Deduct:

Ballots from members in arrears of dues.....	6
" unsigned	32
" with printed signatures.....	3
" with indecipherable signatures.....	2

"Total number not entitled to vote..... 43

"Ballots canvassed	3 599
Void ballots	1

Ballots counted	3 598
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"For President:

JOHN FRANK STEVENS.....	3 560
Scattering	27

"For Vice-Presidents:

Zone II.—JOHN CLAYTON HOYT.....	3 362
Scattering	8
Zone III.—ARTHUR ERNEST MORGAN.....	3 368
Scattering	6

"For Directors:

District No. 1.—GEORGE LATIMORE LUCAS.....	3 341
GEORGE JOSEPH RAY.....	3 350
Scattering	10
District No. 4.—FRANK OLIVER DUFOUR.....	3 323
Scattering	4
District No. 11.—HARRY WHITING DENNIS.....	3 350
Scattering	2
District No. 14.—CON MORRISON BUCK.....	3 322
Scattering	2
District No. 15.—JACOB HERBST BRILLHART.....	3 329
Scattering	1

"HARRY D. WINSOR, Chairman,

JOHN W. DALY,

"H. L. HURD,	C. J. O'CONNOR,
BENJAMIN A. HODGDON,	FRED F. MOORE,
WILBUR T. WILSON,	LOUIS E. ROBBE,
HOWARD HOLBROOK,	ROGER W. ARMSTRONG,
J. H. RICHARDSON,	WILLIAM F. FOX,
EBERHARD WELLE,	ORRIN L. BRODIE,
R. SPEIRS SAUNDERS,	REUBEN T. ROBINSON,
	"Tellers".

Local Sections*

Arizona.—December 20, 1926. Annual Meeting. Morning Session: The meeting was opened with a short talk by President W. W. Lane. A review of the paper, "Channel Trenching in the Arid Southwest", by Mr. Arthur K. Brien, was presented by Mr. Donald K. Dudley, and Mr. James B. Girand spoke on "Requirements of Highway Design and Construction".

Afternoon Session: Mr. A. F. Harter read a paper on "The Construction Progress on the Pleasant Dam", which was followed by a discussion on the "Construction of the Horse Mesa Dam", by Mr. R. G. Baker. A review of Mr. R. L. Olson's new volume "The Colorado River Compact" was presented by Professor G. E. P. Smith. The following officers were elected at the business meeting which followed: President, J. W. B. Blackman; Vice-President, James B. Girand; Secretary, R. A. Hoffman.

Central Ohio.—November 18, 1926. The following officers were elected: President, E. G. Bradbury; First Vice-President, John C. Prior; Second Vice-President, Alvan B. Tallmadge; Secretary-Treasurer, V. A. Eberly. Attendance 21.

December 16, 1926. Professor W. H. Gregory, of Baltimore, Md., spoke on "Trends in Sewerage Design". Mr. Orris Bonney gave a description of the sewerage layout of Columbus, including plans for enlargement. Attendance 25.

Cincinnati.—December 13, 1926. A regular meeting was held in the new rooms of the Engineers' Club of Cincinnati. It was voted to offer an Annual Prize, consisting of the payment of the entrance fee and one year's dues of a Junior Membership in the Society, to the Student Chapter of the University of Cincinnati. Mr. H. W. Streeter, of the U. S. Public Health Service, gave an interesting account of his recent trip to England as a delegate to an International Conference on matters pertaining to public health and sanitary engineering. Attendance 13.

Cleveland.—December 31, 1926. The following officers were elected: President, Kenneth H. Osborn; Vice-President, J. H. Tufel; Secretary-Treasurer, R. D. MacDowell.

Colorado.—November 29, 1926. The meeting was held at the University Club, Denver, following a dinner. Charles D. Vaile, Manager of Improvements and Parks of the City and County of Denver, explained the many details of the Public Service Franchise. A general discussion followed.

December 13, 1926. The meeting was held at the Denver Athletic Club following a dinner which was attended by 23 members and 1 guest. Mr. Fred C. Carstarphen presented a masterful address on aerial tramways, cableways, and hoists, together with their application to individual jobs in the United States and abroad.

Connecticut.—December 11, 1926. A luncheon meeting was held at the Graduates' Club, New Haven. Vice-President Allen Hazen addressed the

* For list of Local Section Officers, Rules, etc., see 1926 Year Book, p. 88.

meeting on "Reservation of Catchment Areas for Future Water Supply of Our Cities". Many members present took part in the discussion which followed. Attendance 29.

Dayton.—December 13, 1926. Annual Meeting. The following officers were elected: President, F. J. Cellarius; Vice-Presidents, N. Q. Sloan, C. H. Eiffert; Secretary-Treasurer, C. S. Bennett. The Executive and Membership Committees of which the President is Chairman, consist of the officers of the Section and Past-President J. K. Grannis.

Duluth.—December 20, 1926. After a business meeting Mr. Allen Hoyt reported his experiences at the Annual Convention of the Society in Philadelphia, Pa., in October, outlining many visits to points of interest. He also described the discussions at the Conference of Local Sections which he attended as the official representative of the Section. Attendance 20.

Georgia.—December 13, 1926. Mr. T. R. Powell, of the Georgia School of Technology, has been elected to receive the prize of Junior Membership in the Society offered by the Section. The following officers were elected: President, S. R. Young; Vice-Presidents, Charles M. Strahan, Robert S. Fiske; Secretary-Treasurer, M. J. Macnabb. Mr. Frank Jaynes addressed the Section on the past accomplishments of the Atlanta Chamber of Commerce and the present plan to raise a fund to continue its work.

Kansas.—December 9, 1926. This was a dinner meeting held at Topeka. The principal address of the evening was given by Governor Ben Paulsen. Attendance 17.

Philadelphia.—October 27, 1926. Charles P. Dampman, Supervisor of Fuel Conservation of the Reading Company, presented a paper on "The Fueling of Engines" and was followed by Charles A. Bingaman, Mechanical Engineer of the Reading Company, who spoke on "Railroad Shops". Mr. Feld, of the Pennsylvania Railroad, addressed the Section on "Management". The meeting was preceded by a dinner at the Engineers' Club and was attended by 25 members and guests. The attendance at the evening meeting was 125.

Rochester.—January 6, 1927. Annual Meeting. The following officers were elected: President, I. E. Matthews; First Vice-President, W. F. Pond; Second Vice-President, P. Waller; Secretary-Treasurer, A. H. Metcalfe.

Sacramento.—November 23, 1926. William H. Misson, Maintenance Engineer of the Pacific Telephone and Telegraph Company, spoke on the new cable recently laid between Sacramento and San Francisco by his Company. Attendance 23.

November 30, 1926. Fred W. Haselwood, Division Engineer, California Highway Commission, gave an address on the "Early History of the Placer-ville Road Across the Sierre Nevada Mountains". Attendance 37.

December 7, 1926. Mr. E. C. Eaton spoke on the tests made on the Stevenson Experimental Dam, after which moving pictures were shown of the dam under construction and the tests being made. Vice-President Walter L. Huber of the Society was a guest. Attendance 40.

December 21, 1926. The Third Annual "Jinks" was held at the Sacramento Hotel, with Mr. Fred Grumm, Chairman of the Entertainment Committee, acting as Master of Ceremonies. A play entitled "The Triumph of Younginus" was presented. Three "arch conspirators", appointees of Governor Richardson and members of the Section, who were charged with political crimes, were brought before Cæser (Governor-elect Young), for punishment. Upon the intercession of a messenger from the Germanii, pleading that the kindly thought of friendship and love be spread abroad, Younginus Cæser commanded that the three captives be released. Attendance 46, of which 37 were members—the largest number recorded since the Section was organized.

December 28, 1926. The Section passed a resolution endorsing the proposed Sacramento Building Code with certain slight modifications and pledged itself to assist in the adoption thereof. Arthur P. Davis, Past-President, Am. Soc. C. E., Chief Engineer, and T. B. Witschen, Attorney, East Bay Municipal Utility District, were guests at this meeting. Attendance 17.

St. Louis.—November 22, 1926. Annual Meeting. The following officers were elected: President, Edward Flad; Vice-President, James C. Travilla; Second Vice-President, R. J. Lockwood; Secretary and Treasurer, H. E. Frech. Mr. C. M. Talbert reported on his visit to the Student Chapter at Missouri University. The meeting was then opened for discussion on the Report of the Joint Committee on Working Stresses for Concrete and Reinforced Concrete. President Flad addressed the meeting. Attendance 30.

San Francisco.—October 19, 1926. A dinner was held at the Engineers' Club at which 86 members and guests were present. Reports of committees were presented and Director H. D. Dewell gave an interesting talk on the technical and entertainment activities at the Annual Convention of the Society at Philadelphia, Pa., and on the Conference of Local Sections. W. H. Kirkbride, Engineer, Maintenance of Way and Structures of the Southern Pacific Company, addressed the meeting on "The Construction of a Three Million Barrel Oil Storage Reservoir at Tracy". Mr. Kirkbride's address was illustrated with lantern slides and was followed by a discussion of certain features by Mr. J. M. Evans, of the Standard Oil Company, who personally had charge of the construction work. Attendance 100.

Engineering Societies Library

The services of the Engineering Societies Library are available to all members who wish searches, copies, translations, etc., or advice on technical literature. A collection of modern books is also available for loan to members in North America, at moderate rentals. Correspondence should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York, N. Y., who will gladly give information concerning the charges for the various kinds of work. A more comprehensive statement in regard to this matter will be found on pages 110 and 111 of the Year Book for 1926.

Book Notices*

(December 1 to December 31, 1926)

Art de l'Ingénieur et Métallurgie. Compiled by L. Descroix. (Extrait du Vol. 5, Tables Annuelles de Constantes et Données Numériques.) Paris, Gauthier-Villars et Cie.; Chicago, University of Chicago Press, 1926. 251 pp., tab., 11 x 9 in., paper. With 25% discount allowed to Society members, price is 78.75 fr., unbound.; or 94.50 fr., bound. Apply to M. Charles Marie, General Secretary, 9 rue de Bagneux, Paris VI^e.

This book, extracted from Vol. 5 of the well known Annual Tables of Numerical Data and Constants, contains the data of importance to engineers and metallurgists which were published in the years 1917-1922, inclusive. It makes available much recent information on the physical and chemical properties of structural materials, on fuels and metals, and on electrical and magnetic constants. It is published under the patronage of the International Research Council.

Civil Engineering Specifications and Quantities. By G. S. Coleman and G. M. Flood. Lond. and N. Y., Longmans, Green & Co., 1926. 282 pp., forms, 9 x 6 in., cloth. \$3.75.

Designed particularly to enable young engineers to obtain a knowledge of the fundamental facts that have to be considered in preparing specifications and quantities for constructional work, this book sets forth the duties, authority, and liabilities of the civil engineer, discusses general considerations respecting contracts with Government authorities, general instructions, conditions in contracts and specifications of various materials. It is adapted primarily to British conditions.

Concrete Practice; a Textbook for Vocational and Trade Schools. By George A. Hool and Harry E. Pulver. N. Y., McGraw-Hill Book Co., 1926. 369 pp., illus., diagrams, tab., 8 x 6 in., cloth. \$3.00.

After setting forth the fundamentals of the subject, this book gives useful instruction on proportioning, mixing, and placing concrete, on estimating, testing, and on field work. Standard specifications and tests are given as appendices.

Graphic Charts in Business. By Allan C. Haskell. Second Edition. N. Y., Codex Book Co., 1926. 413 pp., diagrams, charts, 8 x 6 in., cloth. \$4.00.

This practical book omits mathematical discussion and goes directly to the question of the ways in which the business man may use graphic charts. The various types of charts are described, and the things that each will and will not show are explained.

Jahrbuch der Deutschen Gesellschaft für Bauingenieurwesen, 1926. Berlin, V. D. I. Verlag, 1926. 229 pp., illus., port., map, tab., 8 x 6 in., paper. 10 r.m.

* The statements made in these notices are taken from the books themselves and this Society is not responsible for them. Unless otherwise specified, the books in this list have been donated by publishers.

This second Yearbook of the German Society for Structural Engineering includes interesting papers on developments during the year in concrete and reinforced concrete, on underground structures in cities, and on flying fields. The summaries comprise statistics of the large hydraulic power plants of Germany and a list of the important engineering constructions of the year.

New Building Estimators' Handbook. By William Arthur. Fourteenth Edition. N. Y., Scientific Book Corporation, 1926. 1018 pp., illus., tab., 7 x 5 in., fabrikoid. \$6.00.

This new edition of a useful handbook on costs contains data on materials and labor covering various building and municipal work.

Stereoscopic Photography. By Arthur W. Judge. Bost., American Photographic Pub. Co., 1926. 240 pp., illus., diagrams, tab., 10 x 6 in., cloth. \$5.00.

This is good introduction to the subject. The various methods are described and practical advice is given on cameras, processes, and stereoscopes, together with the applications of stereoscopy to microscopy, astronomy, radiography, and aerial photography.

Trains, Tracks and Travel. By T. W. Van Metre. N. Y., Simmons-Boardman Pub. Co., 1926. 236 pp., illus., 10 x 7 in., cloth. \$3.50.

Professor Van Metre apparently has set himself the task of answering every one of the questions that can occur to curious travelers or the average boy. Step by step he describes the track, locomotives, passenger and freight cars, stations, terminals, and train operation.

Untersuchungen über die Geschiebeableitung bei der Spaltung von Wasserläufen. By Hermann Bulle. (Forschungsarbeiten auf dem Gebiete des Ingenieurwesens, Heft 283.) Berlin, V. D. I. Verlag, 1926. 34 pp., illus., diagrams, 10 x 7 in., paper. 5 r. m.

This pamphlet reports the results of extensive investigations on models, undertaken at the Karlsruhe Hydraulic Laboratory, on the manner in which detritus is divided and deposited when a watercourse branches in various ways. The matters investigated include the explanation of the processes of flow; inquiry into the effect of the size of the branch angle on the distribution of the water and detritus, and of the effect of the divisions of the detritus on that of the water; a fundamental determination of the influence of a rounding off of the entrance into the branch channel and of the influence of various cross-sections of the branch channel below the separation.

Additions to the Reading Room

Centrifugal Pumps, Their Design, Operation and Testing. By George Higgins. Lond., Crosby Lockwood and Son, 1926. 86 pp., 8 $\frac{1}{2}$ by 5 $\frac{1}{2}$ in., cloth 9 s. 6 d.

The preface states that much of the author's practice has been devoted to the use of centrifugal pumps in connection with suction dredges wherein the use of guide-vanes was not permissible, because of the obstruction they would offer to the passage of solid materials. His attention was naturally directed to the design of pumps without guide-vanes and it is this type, chiefly, that he discusses in this book.

Current Civil Engineering Literature

Key to Abbreviated References to Publications Indexed*

Abbreviated References.	Publication.	Place.
Am. C. Inst.	American Concrete Institute, <i>Proceedings</i> (Y.)	
A. I. E. E.	American Institute of Electrical Engineers <i>Journal</i> (M.)	New York
A. R. E. A.	American Railway Engineering Association, <i>Proceedings</i> (Y.)	
A. S. T. M.	American Society for Testing Materials, <i>Proceedings</i> (Y.)	Chicago
Am. Soc. C. E.	American Society of Civil Engineers, <i>Proceedings</i> (M.)	Philadelphia
Am. Soc. Mun. Impvts.	American Society for Municipal Improvements, <i>Proceedings</i> (Y.)	New York
Am. W. W. Assoc.	American Water Works Association, <i>Journal</i> (M.)	Baltimore
Am. Wood Prs. Assoc.	American Wood Preservers Association, <i>Proceedings</i> (Y.)	Chicago
Ann. P. et C.	Annales des Ponts et Chaussees (Bi-M.)	Paris
Ann. T. P. Belg.	Annales des Travaux Publics de Belgique (Bi-M.)	Brussels
Assoc. Ing. Gand.	Annales de l'Association des Ingénieurs sortis des Ecoles Spéciales de Gand (Q.)	Ghent
Bost. Soc. C. E.	Boston Society of Civil Engineers, <i>Journal</i> (M.)	Boston
Can. Engr.	Canadian Engineer (W.)	Toronto
Cornell C. E.	Cornell Civil Engineer (M.)	Ithaca
Dock & Harbour.	Dock and Harbour Authority (M.)	London
Eng.	Engineering (W.)	London
Eng. & Contr.	Engineering and Contracting (W.)	London
Eng. Inst. Can.	Engineering Institute of Canada, <i>Journal</i> (M.)	Montreal
Eng. N. R.	Engineering News-Record (W.)	New York
Engrs. Soc. W. Pa.	Engineers' Society of Western Pennsylvania, <i>Journal</i> (M.)	Pittsburgh
Engr.	Engineer (W.)	London
Engrs. & Eng.	Engineers and Engineering, Engineers' Club of Philadelphia (M.)	Philadelphia
Gas und Wasser	Gas und Wasserfach (W.)	München
Gen. Civ.	Le Genie Civil (W.)	Paris
Gesund. Ing.	Gesundheits Ingenieur (W.)	Munich
Inst. C. E.	Institution of Civil Engineers Minutes of Proceedings (Q.)	London
Inst. Mun. & Co. Engrs.	Institution of Municipal and County Engineers, <i>Journal</i> (W.)	London
Int. Ry. Cong. Assoc.	International Railway Congress Association, <i>Bulletin</i> (M.)	Brussels
Land. Arch.	Landscape Architecture (M.)	Harrisburg
Mech. Eng.	Mechanical Engineering (M.) <i>Journal of the American Society of Mechanical Engineers</i>	New York
Mil. Engr.	Military Engineer (Bi-M.)	Washington
Min. & Metal.	Mining and Metallurgy (M.), American Institute of Mining Engineers	New York
Mun. & Co. Eng.	Municipal and County Engineering (M.)	Indianapolis
N. E. W. W. Assoc.	New England Water Works Association, <i>Journal</i> (Q.)	Boston
N. Y. R. R. Club.	New York Railroad Club, <i>Proceedings</i> (M.)	Brooklyn
Oest. Ing. Arch. Ver.	Oesterreichischer Ingenieur und Architekten Verein, <i>Zeitschrift</i> (F.)	Vienna
Power	Power (W.)	New York
Rev. Gen.	Revue Générale des Chemins de Fer (M.)	Paris
Ry. Age	Railway Age (W.)	New York
Ry. Eng. & Maint.	Railway Engineering and Maintenance (M.)	Chicago
Ry. Rev.	Railway Review (W.)	Chicago
Schw. Bauz.	Schweizerische Bauzeitung (W.)	Zurich
Scl. Am.	Scientific American (M.)	New York
Soc. Ing. Civ. Fr.	Société des Ingénieurs Civils de France, <i>Mémoires et Comptes Rendus</i> (Q.)	Paris
Tech. Gemein.	Technisches Gemeindeblatt (F.)	Berlin
Ver. deu. Ing.	Verein deutscher Ingenieure, <i>Zeitschrift</i> (W.)	Berlin
West. Ry. Club.	Western Railway Club, <i>Proceedings</i> (M.)	Chicago
West. Soc. Engrs.	Western Society of Engineers, <i>Journal</i> (M.)	Chicago
Zeit. Bau.	Zeitschrift für Bauwesen (Q.)	Berlin
Z. d. Bauver.	Zentralblatt der Bauverwaltung (W.)	Berlin

* Y = Yearly; Q = Quarterly; M = Monthly; F = Fortnightly; W = Weekly.

A. Applied Sciences

a. Processes of Calculation

3. Stresses and Strains

The Choice of a Column Formula.* Robins Fleming. West. Soc. Engrs. Oct., '26. Virtual Work: A Restatement.* Discussion: J. Charles Rathbun and Hardy Cross. Am. Soc. C. E. Dec., '26.

B. Applied Mechanics

a. Mechanics of Solids (Strength of Materials)

2. Elastic Solids

Sag-Tension Curves. Discussion: W. Marshall Page and J. C. Stevens. Am. Soc. C. E. Dec., '26.

4. Riveted Systems

Tests of Large Riveted Joints of Various Steels. Eng. N. R. Nov. 25, '26.

6. Heterogeneous Solids (Reinforced Materials)

Steel I-Beams Launched with Concrete.* H. M. Mackay. (Paper read before Am. Inst. Steel Constr.) Can. Engr. Nov. 30, '26.

Stresses in Helically Reinforced Concrete Columns. Discussion: A. W. Zesiger and E. J. Affeldt. Am. Soc. C. E. Dec., '26.

b. Hydraulics

3. Industrial Hydraulics

Power Development at St. Narcisse, Que.* Can. Engr. Nov. 30, '26.

Report on St. Lawrence Power Project. Can. Engr. Nov. 30, '26.

Joint Board of Engineers Reports on St. Lawrence Project.* Eng. N. R. Dec. 2, '26.

German Turbine Construction.* Albert Ungerer. (From paper read before World Power Conference.) Eng. Dec. 3, '26.

Water-Intake Designed for Wide Distribution of Flow.* Milton G. Salzman. Eng. N. R. Dec. 16, '26.

Construction of Great Water Power Plant Well Under Way.* Eng. N. R. Dec. 23, '26.

Verbesserte Rechenreinigung im Kraftwerk Rheinfelden.* (Improved Cleaning of Racks in the Rheinfelden Power Plant.) Robert Haas and Sigmund Bitterli. Ver. deu. Ing. Nov. 6, '26.

Neue Bauarten von selbstansaugenden Kreiselpumpen.* (New Types of Self Starting Centrifugal Pumps.) Fritz Neumann. Ver. deu. Ing. Nov. 20, '26.

4. Dams

Zur Wasserberuhigung unterhalb von Stauwehren.* (On Calming Water Downstream from Weir Dams.) G. Luscher. Schw. Bauz. Nov. 6, '26.

c. Pneumatics

2. Physical Pneumatics

The Florida Hurricane. Robins Fleming. Eng. Dec. 10, '26.

3. Industrial Pneumatics

Control Gear for Electric Pumps and Compressors.* C. H. S. Tupholme. Dock & Harbour. Dec., '26.

C. Materials of Construction and General Processes

a. Lime, Cement, Mortar, Concrete, Brick, Bitumin, Timber, etc.

Corrosion of Concrete.* Discussion: Walter D. Binger. Am. Soc. C. E. Dec., '26.

Water-Ratio Specification for Concrete.* Discussion: T. P. Watson and Charles S. Whitney. Am. Soc. C. E. Dec., '26.

Unit Stresses in Structural Materials. Discussion: G. L. Taylor, Lewis D. Rights, Rudolph P. Miller, L. S. Moisseiff, Gustave Lindenthal, Robert C. Strachan, and Charles S. Whitney. Am. Soc. C. E. Dec., '26.

High Strength Concrete Versus Compressive Reinforcement. M. Hirschthal. Eng. N. R. Dec. 9, '26.

Certain Cements and Their Properties. J. F. Coddard. (Paper read before Inst. of Bldgs.) Can. Engr. Dec. 14, '26.

Zementprüfungsgergebnisse im Stadtbauamt Wien 1926.* (Results of Cement Tests in 1926 by the Vienna Municipal Building Office.) Alex Hasch. Oest. Ing. Arch. Ver. Nov. 26, '26.

Hochwertige Zemente.* (High Grade Cements.) W. Petry. Schw. Bauz. Nov. 27, '26.

c. Preservation and Use of Materials, Painting, Waterproofing

The Value of Paint Primers in Protecting Wood.* M. E. Dunlap. Mech. Eng. Dec., '26.

e. Earthwork, Cubage, Excavating Machinery

Excavating in Water Bearing Sand. Eng. & Contr. (Bldgs.) Nov., '26.

f. Rock Excavation, Mining, Rock Removal

Abstracts of Institute Papers. Min. & Metal. Dec., '26.

g. Execution of Works, Specifications

2. Of Concrete

Rush Construction Job on Portland Stadium.* Eng. N. R. Dec. 23, '26.

4. Of Metal

Some Possible Economies in Steel Construction. C. R. Young. (Paper read before Am. Inst. Steel Constr.) Eng. & Contr. (Bldgs.) Nov., '26.
A 1 000 000 Cu. Ft. Electrically Welded Gasholder.* Engr. Nov. 26, '26.
Experience in Welding Structural Steel and Some Conclusions.* Robert E. Kinkead. Eng. N. R. Dec. 23, '26.

5. Of Reinforced Concrete

Reinforced Concrete Silos at the Ougree-Marihaye Steel Works.* Engr. Serial beginning. Dec. 10, '26.

h. Foundation, Bridge Piers, and Abutments

Foundations in the Winnipeg District.* A. W. Fossess. Eng. Inst. Can. Dec., '26.
Foundation Construction, New York Edison Power Plant.* Eng. N. R. Dec. 2, '26.

j. Piles and Pile-driving

Concreted Piles Impregnated with Asphalt for Sea-Water Use.* George F. Nicholson. (From paper read before Pacific Coast Assoc. Port Auth.) Eng. N. R. Dec. 16, '26.

k. Tunnels and Tunneling-Shields

Methods and Progress in Driving the 8-Mile Great Northern Tunnel in the Cascades.* Eng. N. R. Nov. 25, '26.
Repairing Old Concrete Lining on Two-Track Railroad Tunnel.* H. H. Temple. Eng. N. R. Nov. 25, '26.
La Station de Ventilation du Tunnel de Mornay.* (Ventilation Station for the Mornay Tunnel.) M. Hachon. Rev. Gen. Nov., '26.

D. Highways**a. Location**

Highway Location and Construction. S. W. Jackson. Engrs. Soc. W. Pa. Oct., '26.

c. Construction

Design of Concrete Roads. H. E. Surman. (Paper read before Am. Assoc. State Highway Officials.) Mun. & Co. Eng. Nov., '26.
"Black Base" and Its Place in Standard Specifications. Hugh W. Skidmore. (Paper read before Asphalt Pav. Conference.) Mun. & Co. Eng. Nov., '26.
Construction Details Essential to Effective Hot Mix Pavements. Francis P. Smith. (Paper read before Asphalt Pav. Conference.) Mun. & Co. Eng. Nov., '26.
Economics of Salvaging Old Pavements. R. Keith Compton. (Paper read before Asphalt Pav. Conference.) Mun. & Co. Eng. Nov., '26.
Causes of Success and Failure of Bituminous Macadam Pavements. George H. Henderson. Mun. & Co. Eng. Nov., '26.
Surface Treatment by Hot Application Method. N. S. Anderson. (Paper read before Asphalt Pav. Conference.) Mun. & Co. Eng. Nov., '26.
Quality and Grading of Road Gravel.* E. Skarin. (Paper read before Can. Good Roads Assoc.) Can. Engr. Nov. 23, '26.
London-Oxford Main Road. A 40. E. Winfield. Inst. Mun. & Co. Engrs. Nov. 23, '26.
Construction of Cariboo Highway, B. C.* Can. Engr. Nov. 23, '26.
Effect of Lightning on a Reinforced Concrete Pavement. Discussion: T. A. Ross. Am. Soc. C. E. Dec., '26.
Finishing and Curing of Concrete Roads. Discussion: E. S. Borquist. Am. Soc. C. E. Dec., '26.
"Betonac" Steel Road Surfacing, Bushey Road, Sutton. Wm. Hedley Grieves. Inst. Mun. & Co. Engrs. Dec. 7, '26.
Bituminous Sands of Northern Alberta. S. C. Ells. (Can. Good Roads Assoc.) Can. Engr. Dec. 7, '26.
Asphalt Pavements Laid in Sarnia, Ont.* W. B. Beatty. Can. Engr. Dec. 7, '26.
Maschinen für die neueren Strassenbauverfahren.* (Machines for the More Recent Road Building Methods.) J. Wingerter. Ver. deu. Ing. Nov. 13, '26.
Das Projekt einer Autostrasse Wien—Semmering.* (The Plan for an Auto Road from Vienna to Semmering.) Bernhard Merth. Oest. Ing. Arch. Ver. Nov. 26, '26.
Über die Untersuchung von Bausteinen und Strassendeckstoffen.* (On the Study of Building Stones and Road Paving Materials.) Otto Greger. Oest. Ing. Arch. Ver. Nov. 26, '26.

d. Maintenance

Repair Costs of Rural Pavements. Frank A. Thomas. (Paper read before Am. Soc. Mun. Impvts.) Mun. & Co. Eng. Nov., '26.
General Highway Maintenance Problems in Indiana. A. H. Hinkle. (Paper read before Am. Assoc. State Highway Officials.) Mun. & Co. Eng. Nov., '26.

e. Street Cleaning, Dust Prevention, Snow Removal

Economy of Snow Removal from Highways. W. A. Van Duzer. (Paper read before Am. Assoc. State Highway Officials.) Mun. & Co. Eng. Nov., '26.
Snow Removal Problems of Organization and Operation.* Discussion: W. A. Van Duzer. Am. Soc. C. E. Dec., '26.
Strassenreinigung und Müllabfuhr.* (Street Cleaning and Dust Removal.) Sachtleben. Ver. deu. Ing. Nov. 13, '26.

g. Masonry and Tools

Large Mixing Plant Tried Out on Road Work.* Eng. N. R. Nov. 25, '26.

h. Vehicles, Automobiles, Traffic

Highway Safety Promoted by Mechanical Traffic Control Methods.* Arthur H. Blanchard. (*Bulletin Permanent Int. Assoc. Cong.*) Int. Ry. Cong. Assoc. Nov., '26. Super-Safety Protection for Hudson Tunnel Users. Mun. & Co. Eng. Nov., '26. Observations on the Transit Situation in Some European Capitals. S. M. Swaab. Engrs. & Eng. Nov. 15, '26. Increasing the Efficiency of Passenger Transportation in City Streets.* Discussion: J. P. Snow, Theodore T. McCrosky and F. Lavis. Am. Soc. C. E. Dec., '26. La Capacité de Circulation des Chaussées et des Voies Ferrées.* (Traffic Capacity of Roads and Railroads.) A. Roussel. Gen. Civ. Nov. 20, '26.

x. Miscellaneous

Notes on Arterial Roads in Surrey.* W. P. Robinson. Inst. Mun. & Co. Engrs. Dec. 7, '26. Die III Hauptversammlung des Deutschen Strassenbauverbandes in Stuttgart. (The Third General Meeting of the German Strassenbauverband in Stuttgart.) Karl Mayerhofer. Oest. Ing. Arch. Ver. Nov. 26, '26. Die Strassenverhältnisse Oesterreichs unter besonderer Berücksichtigung der Bundesstrassen. (Austrian Road Conditions with Special Consideration of National Roads.) Gustav Schneider. Oest. Ing. Arch. Ver. Nov. 26, '26. Der Internationale Strassenkongress in Mailand 1926.* (The International Road Congress in Milan, 1926.) Oest. Ing. Arch. Ver. Nov. 26, '26.

E. Bridges, Viaducts and Arches**a. Timber Bridges and Viaducts**

Creosoted Timber Trestles for Louisiana Highway.* Eng. N. R. Dec. 2, '26.

b. Iron and Steel Bridges and Viaducts

The Erection of the Suspended Structure of the Delaware River Bridge.* R. G. Cone. Engrs. & Eng. Nov., '26. Cable Calculations for the Delaware River Bridge.* G. M. Rapp. Engrs. & Eng. Nov., '26. Strengthening Steel and Iron Bridges. (From paper read before Royal San. Inst.) Can. Engr. Dec. 14, '26. Steel Railroad Bridge Raised 21 Ft. Under Traffic.* Eng. N. R. Dec. 23, '26.

d. Concrete and Reinforced Concrete Bridges and Viaducts

Cast-Iron-Concrete Bridge Over the Traun, at Gmünden, Austria.* Eng. Nov. 19, '26. Modern Bridge in Parkway System of Cleveland, Ohio.* A. M. Felgate. Eng. N. R. Nov. 25, '26. Concrete Arch Replaces Viaduct at Portland, Ore.* Eng. N. R. Dec. 9, '26.

f. Suspension Bridges. Transfer Bridges

The Design and Construction of the Florianopolis Bridge.* D. B. Steinman and W. G. Grove. Bost. Soc. C. E. Nov., '26.

g. Swing, Bascule, Lift, Floating, Oscillating Bridges, Travelling Cranes
Erecting Dumbarton Toll Bridge on San Francisco Bay.* Eng. N. R. Nov. 25, '26.

x. Miscellaneous

Long Span Bridges. Charles Evan Fowler. Eng. & Contr. (Bldgs.) Nov., '26.

F. Inland Waters and Waterways**a. Natural Waterways (General Articles)**

The Colorado River Problem.* George M. Bacon. Cornell C. E. Nov., '26.

b. Canals (General Articles)

The New York State Barge Canal and Its Operation. Discussion: Maurice W. Williams and T. Kennard Thomson. Am. Soc. C. E. Dec., '26.

c. Regulation of Waterways—Volume of Discharge, Freshets, Floods, Soundings

Stream Regulation with Reference to Irrigation and Power. Discussion: J. C. Stevens. Am. Soc. C. E. Dec., '26.

Note sur les Débits de la Seine à Paris.* (Note on the Flow of the Seine at Paris.) M. Lang. Ann. P. et C. Sept., '26.

g. Consolidation of Banks, Leakage, etc.

The Panama Canal Relay Pump.* John G. Claybourn. Mil. Engr. Nov.-Dec., '26.

j. River and Lake Ports, Equipment

Cofferdams on Fox River, Wisconsin.* Earl M. Nisen. Mil. Engr. Nov.-Dec., '26.

Design and Construction of Pier "B-C" Canadian Pacific Railway, at Vancouver.* A. D. Wilder. Eng. N. R. Dec. 16, '26.

G. Maritime Works

a. Behaviour of Movements of the Ocean, Winds, Waves, Tides, Currents
Some Large Tides and Their Causes.* L. P. Disney. Mil. Engr., Nov.-Dec., '26.

c. Vessels and Maritime Navigation, Lighthouses, Buoys, Various Signals

The Launch of the Airplane-Carrier U. S. S. "Lexington"*. S. W. Wakeman. (Paper read before Soc. Nav. Archts. & Marine Engrs.) Eng. Serial beginning Dec., '26.

Naval Development of Floats for Aircraft.* Holden C. Richardson. (Paper read before Soc. Naval Archts.) Eng. Dec. 3, '26.

Le 1er Salon Nautique International (Paris, 7-17 octobre 1926).* (The First International Nautical Exposition (Paris, October 7-17, 1926).) L. Poincaré. Gen. Civ. Nov. 6, '26.

Le Paquebot "P. C. Hooft" à Moteurs Diesel-Sulzer, Construit par les Ateliers et Chantiers de la Loire.* (The Ship "P. C. Hooft" with Diesel-Sulzer Engines, Built by the Ateliers et Chantiers de la Loire.) Olivier Quéant. Gen. Civ. Nov. 20, '26.

d. Diverting Dams, Locks, Lifts, Elevators, Inclined Planes

Jetties of 5- to 10-Ton Precast Blocks Built in Florida.* Kennerley Bryan. Eng. N. R. Dec. 23, '26.

h. Boats and Barges

Extension of Royal Edward Dock, Avoumout. Dock & Harbour Dec., '26.

i. Traction, Haulage, Towing, Mechanical Tractors

The Port of Dairen.* Dock & Harbour Dec., '26.

The Leading Port of the Philippines—Manila.* Dock & Harbour Dec., '26.

H. Railroads. Street and Interurban Railways. Automobiles. Aeronautics**a. Railroads****1. General Articles**

How a Road Prepares for Winter at a Large Terminal.* Ry. Eng. & Main. Dec., '26.

Southern Pacific Shortens Line in Texas.* Ry. Rev. Dec. 18, '26.

Southern Pacific Builds Alternate Main Line in Arizona.* Ry. Age Dec. 11, '26; Ry. Rev. Dec. 11, '26.

3. Roadbed (Grading Construction Work)

Reading Changes River Course to Effect Economies.* Ry. Age Nov. 27, '26.

4. Track

New Test Conditions in the Belgian State Railways Specification for Rails.* Jules Willem and Jules Servais. Int. Ry. Cong. Assoc. Nov., '26.

Compensation of Grades on Railway Curves in Australia.* Harold Sutcliffe Mort. (From *Transactions Inst. of Engrs.*) Inst. Ry. Cong. Assoc. Nov., '26.

Steel Ties for South African Government Railways.* Eng. N. R. Nov. 25, '26.

A Transverse Fissure Detector.* M. Suzuki. (From *Bulletin Int. Ry. Cong.*) Ry. Eng. & Main. Dec., '26.

Busiest Crossing on System is Eliminated.* Ry. Rev. Dec. 18, '26.

Protection des Voies Ferrées Contre la Neige.* (Protection of Track from Snow.) Paul Merle. Ann. P. et C. Sept., '26.

Auto-Trempe et Ecouissage Superficiels des Rails en Service.* (Self Tempering and Superficial Cold Hardening of Rails in Service.) M. Sabouret. Rev. Gen. Nov., '26.

Contribution à l'Etude de l'Usure Ondulatoire des Rails.* (Contribution to the Study of the Wavy Wear of Rails.) Ch. Fremont. Gen. Civ. Nov. 13, '26.

5. Signals and Safety Apparatus

Safety and Economy in Railway Operation.* (From *Modern Transport.*) Int. Ry. Cong. Assoc. Nov., '26.

C. & N. W. Replaces Highway Crossing Gates with Wig-Wags.* J. A. Peabody. Ry. Age Nov. 27, '26.

The Resignalling of Cambridge Station.* Engr. Dec. 10, '26.

Automatic Interlockings Show Economy.* J. H. Molloy. Ry. Rev. Dec. 11, '26.

6. Rolling Stock

Railroad Water Treatment. R. E. Coughlan. West. Soc. Engrs. Oct., '26.

General Aspects of Water Treatment for Railroads. R. C. Bardwell. West. Soc. Engrs. Oct., '26.

McClellan Water-Tube Boiler Locomotives.* (From *Railway Mechanical Engineer.*) Int. Ry. Cong. Assoc. Nov., '26.

New 4-8-2 Locomotives for Pennsylvania.* Ry. Rev. Nov. 20, '26.

Electric Locomotives: A Method of Classifying, Analysing, and Comparing Their Characteristics. T. A. F. Stone. (Paper read before Inst. Mech. Engrs.) Engr. Nov. 26, '26.

Fairlie-Parkine Super-Pressure Locomotive.* Engr. Nov. 26, '26.

Heavy Tonnage Trains Are Cheaper. O. O. Carr. Ry. Rev. Dec. 11, '26.

Le Freinage Continu des Trains de Chemins de Fer.* (Continuous Braking of Railway Trains.) M. P. Drosne. Soc. Ing. Civ. Fr. July, '26.

Decisions de l'Union Internationale des Chemins de Fer Concernant le Materiel Roulant.* (Decisions of the Union Internationale des Chemins de Fer Regarding Rolling Stock.) Rev. Gen. Nov., '26.

Die Turbinenlokomotive der Firma J. A. Maffei.* (The Turbine Locomotive of the J. A. Maffei Firm.) Karl Imfeld. Ver. Deu. Ing. Nov. 20, '26.

7. Use of Electricity

Electric Locomotives.* T. A. F. Stone. (Paper read before Inst. Mech. Engrs.) Eng. Nov. 26, '26.

Electric Traction on the Great Northern.* Ry. Age Nov. 27, '26: Ry. Rev. Nov. 20, '26.

Electrification des Chemins de Fer de l'Etat Japonais. Les Nouvelles Locomotives Electriques Westinghouse.* (Electrification of the Japanese State Railways. New Westinghouse Electric Locomotives.) Gen. Civ. Nov. 27, '26.

8. Stations, Terminals, Engine Houses, Shops

B. & O. and Reading Open Joint Produce Terminal.* Ry. Age Dec. 4, '26.

Country's Largest Perishable Terminal Opened.* Ry. Rev. Dec. 4, '26.

c. Ferry Boats

An American Train-Ferry Steamer.* Eng. Serial beginning Nov. 26, '26.

d. Street Railways, Elevated Railways, Subways**6. Traction**

Die Entwicklung des Wagenparks der Berliner Strassenbahn.* (The Development of the Rolling Stock of the Berlin Street Railway.) Pforr. Ver. deu. Ing. Nov. 13, '26.

e. Automobiles**2. Internal Combustion Engine Automobiles**

24/100/140 PS-Kraftwagen mit Gebläsemotor.* (24/100/140 H. P. Automobile with Forced Feed Engine.) A. Heller. Ver. deu. Ing. Oct. 30, '26.

Das Maybach-Fahrgestell mit Siebenliter-Motor.* (The Maybach Chassis with Seven Liter Engine.) F. Friedmann. Ver. deu. Ing. Oct. 30, '26.

x. Miscellaneous

Le XXe Salon de L'Automobile. Véhicules Industriels (Paris, 23-31 Octobre 1926.)* The 20th Automobile Salon. Industrial Vehicles. Paris, October 23-31, 1926. G. Delanghe. Gen. Civ. Serial beginning Nov. 20, '26.

Filessende Fertigung in der Kraftwagenfabrik.* (Continuous Assembling in the Automobile Factory.) H. Häneke. Ver. deu. Ing. Oct. 30, '26.

Kippvorrichtungen auf Lastkraftwagen.* (Tipping Arrangements on Motor Trucks.) W. Rödiger. Ver. deu. Ing. Oct. 30, '26.

f. Aeronautics**1. General Articles**

Meteorology—An Aid to Aviation.* Thomas R. Reed. Mil. Engr. Nov.—Dec., '26.

2. Dirigible Balloons

New 6 000 000 Cubic-Foot Airships for Our Navy.* C. P. Burgess. Sci. Am. Dec., '26.

3. Aeroplanes

Pressure Distribution Over a U. S. A.—27 Aerofoil with Square Wing Tips—Model Tests.* Cecil G. Heard. Mech. Eng. Dec., '26.

4. Aerodromes and Landing Fields

Der Zentralflughafen Berlin.* (The Berlin Central Air Port.) Sauernheimer. Ver. deu. Ing. Nov. 13, '26.

Der Flughafen in Hamburg-Fuhlsbüttel.* (The Airport in Hamburg-Fuhlsbüttel.) Leo. Ver. deu. Ing. Nov. 13, '26.

x. Miscellaneous

Applications of Radio in Air Navigation.* J. H. Dellinger. Engrs. & Eng. Nov., '26.

I. Municipal Water-Works. Agricultural Engineering. Irrigation**a. General Articles**

Water Works at Crystal Beach, Ont.* E. H. Darling. Can. Engr. Dec. 7, '26.

Etude des Méthodes d'Irrigation Employées en Basse-Egypte en Vue de Leur Application à la Camargue.* (Study of Irrigation Methods Used in Lower Egypt in Regard to their Application in Camargue.) M. Derizet. Ann. P. et C. Sept., '26.

b. Hydrology, Water Resources

La Prévision des Besoins des Villes en Eau Potable.* (Anticipation of Potable Water Requirements of Cities.) Paul Lheureux. Gen. Civ. Nov. 20, '26.

c. Dams and Reservoirs

Water-Proof Masonry Dams. Discussion: Karl R. Kennison, P. A. Beatty, R. W. Gausmann, and H. F. Dunham. Am. Soc. C. E. Dec., '26.

Storage Required for the Regulation of Stream Flow.* Charles E. Sudler. Am. Soc. C. E. Dec., '26.

d. Analysis and Purification of Water

Zeolite Method of Water Softening. C. W. Sturdevant. West. Soc. Engrs. Oct., '26.

Treatment of Algae and Weeds in Lakes at Madison.* Bernard P. Domogalla. Eng. N. R. Dec. 9, '26.

Wasserversorgung, Kesselwasseraufbereitung und Abwasserbeseitigung. (Water Supply, Boiler Water Treatment, and Sewage Removal.) A. Splitgerber. Gesund. Ing. Nov. 20, '26.

e. Distribution of Water

A \$9 000 000 Irrigation Development. Eng. & Contr. (Bldgs.) Nov., '26.

Land Settlement of Irrigation Projects. Augustus Griffin. Discussion. Am. Soc. C. E. Dec., '26.

Irrigation with Treated Sewage in Western Texas.* H. N. Roberts and Don L. Jones. Eng. N. R. Dec. 23, '26.

L'Alimentation en Eau de Sagon et Cholon (Indochine). Travaux en Cours et Travaux Projétés.* (Water Supply of Sagon and Cholon (Indo-China). Works Under Construction and Works Contemplated.) A. Mechin. Gen. Civ. Nov. 27, '26.

f. Drainage of Land

Sluice Provision for Tidal Drainage with Special Reference to British Guiana.* Leonard Percival Hodge. Eng. Dec. 3, '26.

J. Sewerage. Sewage and Refuse Disposal

a. Sewers and Drains

St. Blazey Sewerage.* Fred C. Uren. Inst. Mun. & Co. Engrs. Dec. 7, '26.

b. Sewage Disposal, Purification

Bio-Chemical Oxygen Demand of Raw and Treated Sewage.* C. E. Keefer and R. T. Regester. Eng. N. R. Nov. 25, '26.

Grit Chamber Practice. A Symposium. Discussion: Harrison P. Eddy. Am. Soc. C. E. Dec., '26.

The Design, Construction, and Operation of a Small Sewage Disposal Plant. Discussion: H. L. Thackwell. Am. Soc. C. E. Dec., '26.

Submerged Contact-Aerators for Sewage Treatment.* Karl Imhof. Eng. N. R. Dec. 9, '26. Comfort Stations in Cook County Forest Preserve District.* George Elliot Perry. Eng. N. R. Dec. 16, '26.

Die Klärung von Industriewässern, insbesondere Farbwässern.* (Clarification of Industrial Waters, Especially Dye Waters.) Drechsler. Gesund. Ing. Nov. 13, '26.

Die Abwasserbeseitigung Münchens.* (Disposal of Sewage in Munich.) H. Keppner. Ver. deu. Ing. Nov. 13, '26.

Wasserversorgung, Kesselwasseraufbereitung und Abwasserbeseitigung. (Water Supply, Boiler Water Treatment, and Sewage Removal.) A. Splittergerber. Gesund. Ing. Nov. 20, '26.

c. Refuse Disposal

Garbage Disposal. A Symposium. Harrison P. Eddy, L. L. Tribus, J. F. Jackson, and William A. Bassett. Am. Soc. C. E. Dec., '26.

How Washington's Garbage Pays Dividends.* Nell Ray Clarke. Sci. Am. Dec., '26.

K. Heat Engines

b. Steam Turbines

Die Dampfturbopumpe als Wasserwerkmaschine.* (The Steam Turbo-Pump as a Water-works Machine.) Kurzak. Ver. deu. Ing. Nov. 13, '26.

Spaltdruck und Laufradverlust.* (Pressure in Clearance Space and Loss in the Runner.) H. Faltin. Ver. deu. Ing. Nov. 20, '26.

c. Gas and Oil Engines

Der Dieselmotor als Kraftfahrzeugmaschine.* (The Diesel Engine as an Engine for Transportation Purposes.) A. Nagel. Ver. deu. Ing. Serial beginning Oct. 30, '26.

Versuche an einem kompressorlosen Dieselmotor von 500 PSe von Fried. Krupp, A.-G., Essen.* (Experiments on a 50-H. P. Compressionless Diesel Engine of F. Krupp, A.-G., Essen.) F. Romberg. Ver. deu. Ing. Nov. 27, '26.

L. Electricity

a. Production of Electricity

2. Magneto and Dynamo. Electric Machines.

Le Calcul des Anneaux Dynamométriques.* (The Calculation of Dynamometric Rings.) P. Dupont. Gen. Civ. Nov. 27, '26.

b. Distribution and Transmission of Electricity

2. Long-distance Transmission of Energy

Construction of the QQP-Kv. Transmission Line of the Washington Water Power Company.* Lester R. Gamble. A. I. E. E. Dec., '26.

The Vincent 220-Kv. Transmission Line.* C. B. Carlson and H. Michener. A. I. E. E. Dec., '26.

4. Measures. Meters. Rate-Making

Das "Pi-Meter", ein Mitteldruck-Indikator.* (The "Pi-Meter", an Average-Pressure Recorder.) Jos. Geiger. Schw. Bauz. Nov. 20, '26.

6. Safety of Electric Distribution Systems, Laws and Regulations

Lightning: A Study of Lightning Rods and Cages, with Special Reference to the Protection of Oil Tanks.* F. W. Peek, Jr. A. I. E. E. Dec., '26.

x. Miscellaneous

Power Distribution Problems of the Toronto Transportation Commission.* J. F. Neild. Eng. Inst. Can. Dec., '26.

d. Mechanical Uses of Electricity

3. Welding

Flames of Atomic Hydrogen. Irving Langmuir. West. Soc. Engrs. Oct., '26.

Field Welding Experience on 65-In. Mokelumne Pipe.* Arthur P. Davis. Eng. N. R. Dec. 2, '26.

Experience in Welding Structural Steel and Some Conclusions.* Robert E. Kinkead. Eng. N. R. Dec. 23, '26.

e. Electrochemistry and Electrometallurgy

Recherches sur les Phénomènes Thermo-Electriques et Leurs Applications en Métallurgie.* (Research on Thermo-Electric Phenomena and Their Applications in Metallurgy.) M. J. Galibourg. Soc. Ing. Civ. Fr. July, '26.

f. Signals and Communication

Applications of Radio in Air Navigation.* J. H. Dellinger. Engrs. & Eng. Nov., '26.
 Le Cable Téléphonique Souterrain Paris-Rouen-Le Havre.* (The Paris-Louen-Le Havre
 Underground Telephone Cable.) F. Marchay. Gen. Civ. Nov. 13, '26.
 Drahtlose Bildschnelelegraphie und Fernsehen nach dem System Karolus-Telefunken.*
 (Wireless-Phototelegraphy and Television According to the Karolus-Telefunken System.)
 Gustav Eichhorn. Schw. Bauz. Nov. 27, '26.

M. Architecture**b. Business and Commercial Buildings**

Windsor and Bloor Buildings, Toronto.* Can. Engr. Dec. 14, '26.
 Die Entwicklung der Grundrissgestaltung bei den Diensträumen der Reichsbank.* (The
 Development of the Ground Plan in the Offices of the Reichsbank.) Philipp Nitze. Z. d.
 Bauver. Oct. 27, '26.

c. Residences, Hotels

Raum und Materialersparnisse im Entwurf von Serienhäusern.* (Economy of Space and
 Material in the Design of Rows of Attached Houses.) Rudolf Scherer. Oest. Ing. Arch.
 Ver. Serial beginning Nov. 12, '26.

e. Hospitals and Asylums

Die neue Chirurgische Klinik der Tierärztlichen Hochschule in Berlin.* (The New Surgical
 Clinic of the Veterinary Highschool in Berlin.) W. Wolff. Z. d. Bauver. Nov. 24, '26.

f. Factories and Mill Buildings

Der Neubau für die Apparaten-Abteilung der Maschinenfabrik Oerlikon.* (The New Building
 for the Apparatus Department of Oerlikon Machine Works.) Schw. Bauz. Nov. 6, '26.

h. Roofs, Domes

Long Cantilevers Carry 16 Stories of Tall Building.* Eng. N. R. Dec. 16, '26.

O. Administration. Legislation. Economics. Statistics**b. Economic Questions of a General Character; Valuations, etc**

Insurance and the Engineer.* Thomas F. Keating. Cornell C. E. Nov., '26.

e. Legislation—Questions Concerning Wages and Working Conditions

Present Status of Registration of Engineers.* Arthur Richards. Eng. N. R. Dec. 23, '26.

x. Miscellaneous

A Century and a Half of American Engineering. George S. Davison. Am. Soc. C. E. Dec., '26.

Q. Surveying and Geodesy

Land Acquisition by Compulsory Orders.* William Symon. Inst. Mun. & Co. Engrs.
 Nov. 23, '26.
 Aeroplane Topographic Surveys. Discussion: Gerard H. Matthes. Am. Soc. C. E. Dec., '26.
 Aerial Surveys for City Planning. Discussion: Arthur S. Tuttle, F. L. Olmsted, and Charles
 N. Green. Am. Soc. C. E. Dec., '26.

S. City Planning

Town Planning and Its Relations to the Professions Involved. Discussion: Thomas
 Adams, Esq. Am. Soc. C. E. Dec., '26.
 The Engineer and the Town Plan. Discussion: Charles H. Paul. Am. Soc. C. E. Dec., '26.
 Analgen für Spiel und Sport.* (Establishments for Play and Sport.) Maison. Tech. Gemein.
 Nov. 5, '26.

Employment Service

The Engineering Societies Employment Service is under the joint management of the National Societies of Civil, Mining, Mechanical, and Electrical Engineers. A Chicago office is maintained in co-operation with the Western Society of Engineers, and a San Francisco office, in co-operation with the Engineers' Club of San Francisco and the California Section of the American Chemical Society. The Service is available only to the several memberships and is maintained by contributions from the Societies and their individual members who are directly benefited.

Offices.—Eastern Office, 33 West 39th Street, New York, N. Y., Walter V. Brown, Manager; Chicago Office, 53 West Jackson Boulevard, Room 1736, Chicago, Ill., A. Krauser, Manager; and San Francisco Office, 57 Post Street, Room 715, San Francisco, Calif., Newton D. Cook, Manager.

Men Available.—Under this heading, brief announcements will be published without charge. These announcements will not be repeated, except on request received after an interval of one month. Names and records will remain in the active files of the Service for a period of three months, and are renewable on request. Notices for *Proceedings* should be addressed to Employment Service, 33 West 39th Street, New York, N. Y., and should be received prior to the first of the month.

Opportunities.—A Bulletin of engineering positions available is published weekly and may be obtained by members of the Societies concerned at a subscription rate of \$3 per quarter, or \$10 per annum, payable in advance. Positions which are not filled promptly as a result of publication in the Bulletin, may be announced herein.

Voluntary Contributions.—Members obtaining positions through the medium of this Service are invited to co-operate with the Societies in the financing of the work by nominal contributions made within thirty days after placement, on the basis of \$10 for all positions paying a salary of \$2 000 or less per annum; \$10 plus 1% of all amounts in excess of \$2 000 per annum; temporary positions (of one month or less), 3% of total salary received. The income contributed by the members, together with the finances appropriated by the four Societies named, will be sufficient, it is hoped, not only to maintain but to increase and extend the Service.

Replies to Announcements.—Replies to announcements published herein, or in the Bulletin, should be addressed to the key number indicated in each case, with a two-cent stamp attached for re-forwarding, and forwarded to the Employment Service at the address given. Replies received by the Service after the positions to which they refer have been filled, will not be forwarded.

MEN AVAILABLE

CONSULTANT, M. Am. Soc. C. E.; age 48; graduate in civil engineering. Twenty-four years on design and construction, railroads, industrial plants, sewers, ports. Last several years' work by administration. Cost analysis, investigations, estimates, reports. B-598.

RECENT GRADUATE CIVIL ENGINEER, three seasons' experience on concrete pavement construction. Has specialized in

hydraulic and structural engineering in college. Would like hydro-development work in any capacity. Available immediately. Will go anywhere. B-1437.

CONSTRUCTION ENGINEER AND SUPERINTENDENT, M. Am. Soc. C. E.; age 46; married. Fifteen years' experience, general construction on design, estimating, planting, superintendence in full charge. Location, anywhere. B-3852.

CIVIL ENGINEER (heavy construction), Assoc. M. Am. Soc. C. E.; age 36; married; graduate civil engineer. Ten years, construction; four years, foundry, railroad, plant, New York subway, elevated railroad, and pavement construction, field supervision, and office estimating. At present, assistant superintendent for large paving contractor. Location preferred, Central States. B-4052.

CONSTRUCTION ENGINEER, Assoc. M. Am. Soc. C. E.; age 40; married. Degrees, A. B. and A. M. Eighteen years' experience, railroad, building, irrigation, and dam work in West. Location, any place. B-5149.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E., graduate, Rensselaer Polytechnic Institute. Four years, drafting, steel and concrete; four years on construction, resident engineer, reinforced concrete and tunnel work; two years, valuation work; two years, Captain, Engineers, U. S. Army; four years, investigations, reports in South America and China; four years, estimating, general building construction. Prefers investigation, valuation, estimating. B-5455.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E. Five years' experience, industrial buildings, wants position with contractor or consulting engineer. Location, East, or South America. B-6496.

OFFICE OR CONSTRUCTION ENGINEER, M. Am. Soc. C. E.; age 45; married; graduate civil engineer, with fifteen years' practical experience in design and construction of highway and railroad improvements, and seven years in civil engineering editorial and instruction work by correspondence. Location, Eastern or Southern United States. B-6708.

CIVIL ENGINEER; age 28; married. Qualified for any position allied to the construction business. Has been head of company engaged for three years in extensive building construction. Graduate with honors, U. S. Military Academy, West Point, and Massachusetts Institute of Technology. Location, anywhere, preferably United States. B-7084.

HUSTLING GENERAL FOREMAN and a competent job engineer; age 37. Experienced on foundations, caisson, coffer-dam, piling and underpinning, including the excavation, concreting, and water-proofing. Wishes to make a permanent connection with a live firm. B-7365.

CIVIL AND ARCHITECTURAL ENGINEER, Assoc. M. Am. Soc. C. E.; university graduate; licensed; age 30; single. Nine years, all phases, municipal engineering; industrial buildings; special studies; designer; checker; estimates, specifications, and field. Experienced squad leader, chief assistant, in charge of office. Location preferred, New York City. B-7600.

ENGINEER OR SUPERINTENDENT, Assoc. M. Am. Soc. C. E.; age 43; married. Design and superintendence, construction, railroad and municipal work, bridges, and buildings. Superintendence of construction preferred on salary with bonus based on saving. Location, immaterial. B-9497.

RESIDENT ENGINEER-DRAFTSMAN, Jun. Am. Soc. C. E.; age 29; married. Experienced engineer, transmission line surveys, design, construction, railway drafting, construction, maintenance. Mine surveys, mapping, highway design, and construction. Thoroughly experienced and competent;

neat and rapid draftsman; rapid and accurate field engineer. Location preferred, Kentucky, Virginia, West Virginia, Tennessee, North Carolina, Pennsylvania. B-9582-1023.

CIVIL ENGINEER, M. Am. Soc. C. E.; age 41; graduate. Twenty years' experience; coal mine construction and operation, railroad location and construction, highway location, construction, and maintenance. Last four years, county engineer, large Eastern county. Present location, Colorado. Location desired, Rocky Mountain or Pacific Coast States. B-9641.

CIVIL AND INDUSTRIAL ENGINEER, Assoc. M. Am. Soc. C. E.; age 35; single; technical graduate, C. E. Seven years, construction; five years, manufacturing. Thoroughly experienced in latest practice. Has specially studied economy in construction operations. Thoroughly experienced in industrial engineering methods. Capable of superintending layout and construction of complete plant. Location, preferably East, next choice Chicago, Ill. C-457-236.

RECENT CIVIL ENGINEERING GRADUATE; age 24; single; capable of doing designing and detailing of structural steel and reinforced concrete, sanitary engineering, hydraulic engineering, and general field work on surveys. Location, preferably New York or Boston. C-1430.

TRANSITMAN; age 26; married. Young man with four years' experience, wants position as transitman in or around New York City. C-1504.

DIRECTOR OF CITY PLANNING OR EXECUTIVE SECRETARY; CITY PLANNING COMMISSION, Assoc. M. Am. Soc. C. E.; age 39; married; technical graduate. Executive, forceful but diplomatic. Assistant to a foremost professional city planner, ten years; student of city planning eighteen years. Prepared to make plans and recommendations and proceed with accomplishment relating to streets, traffic, parks and playgrounds, schools, and public building sites, commercial, industrial, and recreational water-fronts, plats and subdivisions, housing, zoning, and other city planning elements. City and regional planning publicity and research. C-2242.

LOCATING ENGINEER; age 44; single. Twelve years' experience in Latin-American countries; several years' railroad experience, unusual experience with Spanish speaking people. C-2245.

CIVIL ENGINEER AND SUPERINTENDENT OF CONSTRUCTION, M. Am. Soc. C. E. Thirty years' experience in municipal, State, Government, railroad, and private work. Available on short notice. C-2291.

GRADUATE ENGINEER, M. Am. Soc. C. E.; degree, C. E., Cornell. Twenty-three years experience in civil engineering. Last seven years in charge of office with direct supervision over the construction of docks, dams, bridges, power-houses, river and harbor work, water supply reservoirs, pipe lines, including much of the design. Open for engagement February 1, 1927. C-2300.

STRUCTURAL AND HYDRAULIC ENGINEER, Assoc. M. Am. Soc. C. E.; age 40; married. Twenty years' experience, mostly on water-works, irrigation, flood control, and harbor projects of unusual magnitude, including investigations, design, and construction, with established qualifications as chief draftsman and office engineer. Location, preferably Oakland or San Francisco, Calif. C-2350-12-A-11.

Membership

(From December 7, 1926, to January 5, 1927.)

Additions

		Date of Membership
ACKERMAN, Adolph John. Hydr. Designer, Stone & Webster, Inc., 147 Milk St., Boston, Mass.	Jun.	Dec. 3, 1926
ALMOND, William Henry. Draftsman, Gibbs & Hill, New York (Res., 9401 Fortieth Drive, Elmhurst, N. Y.)	Jun.	Dec. 3, 1926
AROSEMENA, Leopoldo. Chf. Engr., Dept. of Public Works, Apartado 33, Panama, Panama	Assoc. M.	Dec. 3, 1926
BAHARAV, Ernest Zadok. Draftsman, Weinberger & Weisshoff, 247 Park Ave., New York (Res., 438 Pacific St., Brooklyn), N. Y.	Jun.	Dec. 3, 1926
BASKETT, John Lewis. 2917 Douglas St., Dallas, Tex.	Jun.	July 12, 1926
BATT, Richard William 2 Madison St., Somerville, Mass.	Jun.	Dec. 3, 1926
BENES, Edward William. Structural Draftsman, Am. Bridge Co. (Res., 192 Marshall St.), Gary, Ind.	Jun.	Dec. 3, 1926
BROADFOOT, Hollis Lee. Insp., U. S. Engrs., Dam 51, Goldconda, Ill.	Jun.	June 7, 1926
BURGESS, Arthur Willard. Rodman, M. of W. Dept., Mo. Pac. R. R., 200 South 7th St., Van Buren, Ark. (Res., 5920 Etzel Ave., St. Louis, Mo.)	Jun.	Oct. 1, 1926
BURNETTE, Frank Rupert. Asst. Supt., Coke Works, Am. Steel & Wire Co., Rockefeller Bldg., Cleveland, Ohio	Assoc. M.	Mar. 14, 1916
	M.	Dec. 3, 1926
CARTER, Payson Dennis. Draftsman, Atwood & Nash, Inc., Chapel Hill, N. C.	Jun.	Oct. 1, 1926
CLEMENTS, James Strong, Jr. 13 West Ave. G, Temple, Tex.	Jun.	Nov. 15, 1926
COMMONS, John Pinkerton. Draftsman, Bureau of Water Works and Supply (Res., 321 South Alvarado St.), Los Angeles, Calif.	Jun.	Dec. 3, 1926
CONNOR, Dewey Ross. 1624 Lynch Ave., East St. Louis, Ill.	Jun.	Dec. 3, 1926
COOMES, Ralph Edwin. Designer, Central Hudson Gas & Elec. Co., 50 Market St., Poughkeepsie, N. Y.	Jun.	Nov. 15, 1926
COSTELLO, Angelo. 31 South Union St., Rockland, Mass.	Jun.	Nov. 15, 1926
COTLIN, Joseph Walker. Draftsman, Designer, and Estimator, Alabama Power Co., Eng. Dept., Birmingham, Ala.	Assoc. M.	Nov. 15, 1926
CUNNEY, George Aloysius. 7319 West Chester Pike, Upper Darby, Pa.	Assoc. M.	Dec. 3, 1926
DANIEL, Julian Turk. Asst. Res. Engr., Hardaway Contr. Co., Elmodel, Ga.	Jun.	Oct. 1, 1926
DAWSON, Wendell. 900 Vaughn St., Apartment 35, Portland, Ore.	Jun.	Nov. 15, 1926
DIEHL, Paul Adam. Western Representative, Black & Veatch, 307 South Hill St. (Res., 745 South Detroit St.), Los Angeles, Calif.	Assoc. M.	Nov. 15, 1926
DUNKEL, Otto. Chf. Eng. Depts., Llewellyn Iron Works, Box 36, Los Angeles, Calif.	M.	Dec. 3, 1926
EVANS, John Clifford. Care, Nazareth Cement Co., Nazareth, Pa.	Assoc. M.	July 12, 1926
EVERS, William Henry. Pres., The Wm. H. Evers Eng. Co.; Pres., The R. C. Products Co., 1048 Engrs. Bldg., Cleveland, Ohio.	Assoc. M.	Mar. 4, 1914
	M.	Dec. 3, 1926
FEICK, Richard Emil. With The George Feick & Sons Co., Cor., Decatur and Central (Res., 808 Central Ave.), Sandusky, Ohio.	Jun.	Dec. 3, 1926
FEINSTEIN, Emanuel Mandel. With The Austin Co., 160 North La Salle St., Room 1300 (Res., 315 South Karlov Ave.), Chicago, Ill.	Jun.	Oct. 1, 1926
FOUSHEE, John McIver. Chi Phi House, Chapel Hill, N. C.	Jun.	Oct. 1, 1926
FRY, George Washington. Pres., West Texas Utilities Co., Abilene, Tex.	Assoc. M.	Oct. 11, 1920
	M.	Dec. 3, 1926
GALBREATH, Albert Webster. Valuation Engr., M-K-T Lines, Parsons, Kans.	Assoc. M.	April 17, 1917
GOEDER, Frank Peat. Associate Prof. of Physics, Colorado Agric. Coll., Fort Collins, Colo.	M.	Dec. 3, 1926
GRANT, Donald Francis. 15 Edgewood Ave., New Haven, Conn.	Assoc. M.	April 17, 1917
GRIGGS, Ernest Lee. Prof., Civ. Eng. and Drawing, Univ. of Georgia (Res., 264 Dearing St.), Athens, Ga.	M.	Dec. 3, 1926
HARRIS, Charles William. Prof., Hydr. Eng., Univ. of Washington (Res., 3635 Forty-second Ave., N. E.), Seattle, Wash.	M.	Nov. 15, 1926
HAZELTON, John Stephen. Engr., Special Assignments, State Highway Comm., 1216 West High St., Jefferson City, Mo.	M.	July 12, 1926
HOFFERT, John Raymund. Civ. Engr., Pennsylvania Dept. of Health, Harrisburg (Res., 209 North 26th St., Camp Hill), Pa.	Assoc. M.	Dec. 3, 1926
	M.	Dec. 3, 1926
HOWES, Donald Winthrop. Res. Engr., Fuller & McClintock, Tenny, N. J.	Assoc. M.	April 4, 1905
	M.	July 2, 1913
	M.	Dec. 3, 1926

MEMBERSHIP—(Continued)

		Date of Membership.
JORDAN, Joseph Alexander. Constr. Engr., William F. Kenny Co., 44 East 23d St., New York (Res., 888 Union St., Brooklyn), N. Y.	Assoc. M.	Dec. 3, 1926
JORGENSEN, Hans William. Deputy City Engr., 3948 Albatross St., San Diego, Calif.	M.	Nov. 15, 1926
KELLY, Joe Wallace. Engr., Portland Cement Assoc., 33 West Grand Ave. (Res., 2717 Coyle Ave.), Chicago, Ill.	Assoc. M.	Dec. 3, 1926
KELLY, Russell Morgan. Asst. Div. Engr., N. Y. C. R. R., Box 107, Oswego, N. Y.	Assoc. M.	Dec. 3, 1926
KENNEDY, John Wilford. Engr. in Chg., Service Bureau, Huron Portland Cement Co., 1325 Ford Bldg., Detroit, Mich.	Assoc. M.	Dec. 3, 1926
KO, Choong Myung. 459 West 21st St., New York, N. Y.	Jun.	Dec. 3, 1926
LABOON, Frazier Pickens. St. Clair, Mo.	Jun.	Oct. 1, 1926
LAMBERT, Robert Davison. 458 West 119th St., Whiting, Ind.	Jun.	Oct. 1, 1926
LANT, Norman Edward. State Bridge Engr., Louisiana Highway Comm., Baton Rouge, La.	Assoc. M.	Sept. 10, 1923
LARSEN, Harold Theodore. Instr., Civ. Eng. Dept., Univ. of Illinois, Urbana, Ill.	M.	Dec. 3, 1926
LARSON, Linné Clarence. Asst. Civ. Engr., Outfall Sewer Div. (Res., 4641 Melbourne Ave.), Los Angeles, Calif.	Jun.	Dec. 15, 1924
LATHAM, William Harris. With John W. Ferguson Co., 152 Market St., Paterson, N. J. (Res., Norwich Town, Conn.)	Assoc. M.	Aug. 30, 1926
LEWIS, Chester Franklin. Cons. Engr. (Spoon & Lewis), Box 990, Greensboro, N. C.	Jun.	Nov. 15, 1926
LEWIS, James Spencer, Jr. Care, Baker County Power Co., Elmodel, Ga.	Jun.	Dec. 3, 1926
LINKER, William. (Wm. Linker Co.), 735 Cherry St., Philadelphia, Pa.	Assoc. M.	Nov. 15, 1926
LITT, Morris Robert. With William D. Smith, 620 First St., Portland, Ore.	M.	Nov. 15, 1926
LOUISON, Ben Howe. 916 Monroe St., Ann Arbor, Mich.	Jun.	Nov. 15, 1926
MACNABB, Thomas Creighton. Engr. of Constr., C. P. Ry., Winnipeg, Man., Canada.	Jun.	Nov. 15, 1926
MACNAUGHTON, George Douglas. Asst. Civ. Engr., State Highway Dept., 921 Bergen Ave. (Res., 2540 Boulevard), Jersey City, N. J.	Jun.	Dec. 3, 1926
MCKEAN, James Percival. Asst. City Engr., Box 787, Abilene, Tex.	Jun.	Dec. 3, 1926
MCKEON, Francis Daniel. 901 Tallman St., Syracuse, N. Y.	Jun.	Oct. 1, 1926
MAKAROFF, George Alexander. Care, Rhodes, 524 West 123d St., New York, N. Y.	Jun.	Dec. 3, 1926
MANCINI, John Adolph. Box 285, Route No. 1, Hayward, Calif.	Jun.	Dec. 3, 1926
MARSH, Robert Malcolm. Supt. of Constr., Weldon Contr. & Eng. Co. (Res., 739 Fairaces Ave.), Westfield, N. J.	Assoc. M.	July 12, 1926
MAUGH, Lawrence Carnahan. Instr., Civ. Eng., Univ. of Michigan (Res., 1103 Church St.), Ann Arbor, Mich.	Jun.	Nov. 15, 1926
MEIBERS, George Rudolf. Sales Engr., New England Metal Culvert Co., Palmer (Res., 56 Verdugo St.), Mittineague, Mass.	Jun.	May 28, 1923
MESSONE, Luis Alberto. Sgo. del Estero, 452, Salta, Argentine Republic.	Assoc. M.	Dec. 3, 1926
MOLINA, Elpidio Pilar. Detailer, Lord & Holinger, 140 South Dearborn St., Chicago, Ill.	Jun.	June 7, 1926
MOLNAR, Tibor. 57 West 50th St., New York, N. Y.	Jun.	Dec. 3, 1926
MONEY, John Marshall. Baxley, Ga.	Jun.	Aug. 30, 1926
O'CONNELL, William James, Jr. San. Engr., Wallace & Tiernan, 57 Post St., San Francisco, Calif.	Jun.	Dec. 3, 1926
OHLSSEN, Edward Henry. Draftsman, Eng. Dept., C. M. & St. P. Ry., Union Station (Res., 8203 South Ada St.), Chicago, Ill.	Jun.	Oct. 1, 1926
PARK, John Charles. Res. Engr., Herbert S. Crocker, 2357 Dexter St., Denver, Colo.	Assoc. M.	July 12, 1926
PARKER, Granville. Care, The H. K. Ferguson Co., 540 Findlay St., Portsmouth, Ohio.	Jun.	Dec. 3, 1926
PARKES, Geoffrey Alexander. Prin. Asst. to Chf. Engr. of Sewers, Los Angeles (Res., 1725 Virginia Pl.), South Pasadena, Calif.	Assoc. M.	Dec. 3, 1926
PETERSON, Edward John Lawrence. Draftsman, State Highway Comm., 403 Stub Bldg., Sacramento, Calif.	Jun.	Oct. 1, 1926
POTTS, C. Harris. 618 Twenty-ninth Ave., San Francisco, Calif.	Jun.	June 1, 1925
PRICE, Campbell Gwyllae. Chf. Asst. Engr. to C. Carkeet James, "Abbotsfield", Tavistock, Devonshire, England.	Assoc. M.	Nov. 15, 1926
PRITCHARD, John Charles. Director, Public Utilities, City of St. Louis, 312 City Hall, St. Louis, Mo.	Assoc. M.	Aug. 30, 1926
PRITCHARD, John Charles. Director, Public Utilities, City of St. Louis, 312 City Hall, St. Louis, Mo.	Jun.	Sept. 1, 1908
PRITCHARD, John Charles. Director, Public Utilities, City of St. Louis, 312 City Hall, St. Louis, Mo.	Assoc. M.	Oct. 4, 1910
PRITCHARD, John Charles. Director, Public Utilities, City of St. Louis, 312 City Hall, St. Louis, Mo.	M.	Oct. 1, 1926
QUINN, Frank Taylor, Jr. Draftsman, Layne & Bowler Mfg. Co. (Res., 394 South Orleans), Memphis, Tenn.	Jun.	Dec. 3, 1926
RAPP, George Washington. Chf. Engr., Ohio Val. Rock Asphalt Co., Louisville, Ky. (Res., 1337 Chapel St.), Cincinnati, Ohio.	Assoc. M.	Nov. 15, 1926

MEMBERSHIP—(Continued)		Date of Membership.
REMLEY, Norman Williams.	Draftsman, Bureau of Bridges, State Highway Dept., 321 Capitol Bldg., Jefferson City, Mo.	Jun. Nov. 15, 1926
ROBERTSON, Walter Harrison.	Asst. Engr., Massey Concrete Products Corporation, 968 Peoples Gas Bldg., Chicago, Ill.	Jun. Jan. 16, 1922
ROBINSON, John Edward.	Care, Am. Bridge Co., Elmira Heights, N. Y.	Assoc. M. Oct. 1, 1926
ROHLWING, Anson William.	Traveling Representative, Technical Dept., Atlas Luminite Cement Co. (Res., 3380 North Meridian St., Apartment J-5), Indianapolis, Ind.	Jun. Nov. 15, 1926
ROSS, Ernest Sylvester.	Cons. Engr., Nippon Oil Co., Ltd., Marunouchi, Tokyo, Japan.	M. Nov. 15, 1926
ROSS, Grant Duncan.	City Engr. (Res., 210 West 7th St.), Aberdeen, Wash.	Jun. July 12, 1926
SCHADICK, Campbell Frederick.	County Engr., Buller County, Westport, New Zealand.	Jun. June 7, 1926
SETTE, Francis Joseph.	Asst. Prof., Civ. Eng., Coll. of Agriculture and Eng., Univ. of Porto Rico, Mayaguez, Porto Rico.	Assoc. M. Nov. 15, 1926
SIEMS, Valentine Beraard.	Vice-Pres. and Gen. Mgr., North Am. Water Works Corporation, 57 William St., New York, N. Y.	Assoc. M. Nov. 25, 1919
SILVER, Isadore.	502 North Kalamazoo St., Paw Paw, Mich.	M. Dec. 3, 1926
SKYTTÉ, Johannes.	Engr., The Foundation Co., Kohl Bldg., San Francisco (Res., 2239 Parker St., Berkeley), Calif.	Jun. Dec. 3, 1926
SMITH, John Gibb, Jr.	Asst. Superv., Atlantic City R. R., Camden, N. J. (Res., 6701 North 12th St., Philadelphia, Pa.)	Assoc. M. July 12, 1926
STEDJIE, John Jay.	Concrete Engr., Board of Local Impvts. (Res., 3217 Balmoral Ave.), Chicago, Ill.	Jun. Dec. 3, 1926
STERNS, Jeno.	Designer, Weiskopf & Pickworth (Res., 1391 Stevens Ave.), New York, N. Y.	Assoc. M. Aug. 30, 1926
TOMLINSON, Henry Hansell.	864 Wynnewood Rd., Philadelphia, Pa.	Jun. Dec. 3, 1926
UPSON, Maxwell Mayhew.	Vice-Pres. and Gen. Mgr., Raymond Concrete Pile Co., 140 Cedar St., New York, N. Y.	Assoc. M. May 6, 1908
WEIL, Conrad, Jr.	Pension Liesecke, Maximiliansplatz 7-III, Munich, Bavaria, Germany.	M. Dec. 3, 1926
WICH, John Faulkner.	2923 Windsor Ave., Walbrook, Baltimore, Md.	Jun. Nov. 15, 1926
		Jun. Aug. 30, 1926

Reinstatements

MEMBERS	Date of Reinstatement.
MURTAUGH, Mark Maurice.	Dec. 17, 1926
ASSOCIATE MEMBERS	
CARO, Phillip.	July 12, 1926
JENKS, Harry Neville.	Dec. 17, 1926
SEXTON, Ralph Ernest.	Dec. 17, 1926

Resignations

MEMBERS	Date of Resignation.
BIGELOW, William Walter.	Dec. 17, 1926
BREWER, Bertram.	Dec. 31, 1926
COLE, Clinton Llewellyn.	Dec. 31, 1926
CRUMPTON, Arthur.	Dec. 17, 1926
FOUNTAIN, Thomas Lilly.	Dec. 17, 1926
GRAVES, Walter Joseph.	Dec. 31, 1926
KIMBALL, Frank Clifton.	Dec. 31, 1926
KOREN, Jess Didriksen.	Dec. 31, 1926
WEED, Irving.	Dec. 31, 1926
WHISTLER, John T.	Dec. 31, 1926
WILSON, Thad Loren.	Dec. 31, 1926
WOOLLEY, William John Moore.	Dec. 31, 1926
ASSOCIATE MEMBERS	
ALLEN, Maynard Edward.	Dec. 17, 1926
ANDERSON, Arthur G.	Dec. 31, 1926
ARMSTRONG, Charles Johnstone.	Dec. 31, 1926
ASH, Dorsey.	Dec. 31, 1926

ASSOCIATE MEMBERS—(Continued)

DURANT, William Bullard.....	Dec. 31, 1926
EDEN, Alfred William Alexander.....	Dec. 31, 1926
GALE, Leland Isaac.....	Dec. 31, 1926
HASBROUCK, Oscar.....	Dec. 17, 1926
HESTERLY, Homer Wynne.....	Dec. 31, 1926
JOHNSON, Edwin Samuel.....	Dec. 31, 1926
MARTIN, Richard Herbert.....	Dec. 31, 1926
MURDOCK, Robert Bruce.....	Dec. 17, 1926
PHILLIPS, Walter Belleville.....	Dec. 31, 1926
POMMERER, Robert William.....	Dec. 31, 1926
RANKIN, Harry Howard.....	Dec. 17, 1926
RENNER, Frank Axtelle.....	Dec. 31, 1926
WICHMAN, Ralph Darwin.....	Dec. 17, 1926
WOODLE, Bernon Tisdale.....	Dec. 31, 1926

AFFILIATES

COLSTEN, Albert Lloyd.....	Dec. 31, 1926
MANWARING, Roy Artimus.....	Dec. 31, 1926

JUNIORS

COAKLEY, Clyde Edwards.....	Dec. 31, 1926
HENRIQUEZ, Charles Sydney, Jr.....	Dec. 31, 1926
LEWIS, Elbert Francis.....	Dec. 31, 1926
LUCHINGER, Albert.....	Dec. 31, 1926
ROUNDS, Harold Percival.....	Dec. 31, 1926
SARVIS, Robert Guyle Fenton.....	Dec. 31, 1926
SCHNEIDER, Edward Charles.....	Dec. 31, 1926
TOWNSHEND, Ralph.....	Dec. 31, 1926
VICKER, Harold Arthur.....	Dec. 31, 1926
WEHNER, Charles Jay.....	Dec. 31, 1926
ZIBILICH, Anthony Michael.....	Dec. 31, 1926

Deaths

BRIGGS, Waldo Clayton. Elected Member, July 10, 1907; died December 13, 1926.
CHAMBERLAIN, Phillip William. Elected Member, October 2, 1895; died December 3, 1926.
DRESSLER, Harvey Jacob. Elected Member, March 15, 1926; died December 9, 1926.
GRANT, Thomas Henry. Elected Associate Member, May 6, 1891; died December 6, 1926.
MAITLAND, Alexander, Jr. (Director). Elected Member, November 6, 1901; died December 24, 1926.
SMITH, Merritt Haviland. Elected Junior, June 5, 1889; Member, April 3, 1907; died December 9, 1926.
TALLMAN, Paul Bertram. Elected Junior, October 3, 1905; Associate Member, September 6, 1910; Member, May 28, 1923; died July 29, 1926.
WAHLMAN, Petrus. Elected Member, December 6, 1915; died March 11, 1926.

Total Membership of the Society, January 4, 1927.

Members	5 210
Associate Members	5 497
Corporate Members.....	10 707
Honorary Members	14
Juniors	1 133
Affiliates	148
Fellows	8
Total	12 010